REMARKS

By this amendment, claim 3 is amended to correct an informality; claims 1, 8, 15, and 22- 26 are amended to more appropriately define the present invention; claims 27, 30, 33 and 36 are cancelled, without prejudice or disclaimer of the subject matter thereof; and claims 31 and 34 are amended to correct claim dependencies. Claims 1-26, 28, 29, 31, 32, 34, and 35 are pending.

In the Office Action, the Examiner objected to claim 3; rejected claims 1, 4, 8, 11, 15, 18 and 22 under 35 U.S.C. § 102(b) as anticipated by Poggio et al. (U.S. Patent No. 5,642,431); rejected claims 2, 3, 9, 10, 16, 17, and 23-26 under 35 U.S.C. § 103(a) as unpatentable over Poggio in view of Qian (U.S. Patent No. 6,148,092); rejected claims 5, 6, 12, 13, 19, 20, 27, 28, 30, 31, 33, 34, and 36 under 35 U.S.C. § 103(a) as unpatentable over Poggio in view of Zettel et al. (U.S. Patent No. 4,975,970); and rejected claims 7, 14, 21, 29, 32, and 35 under 35 U.S.C. § 103(a) as unpatentable over Poggio in view of Zettel, and further in view of Qian.

Applicants appreciate the Examiner's thorough examination of this application, especially the detailed citations which aided Applicants in reviewing the Examiner's comments. Nevertheless, Applicants respectfully traverse the rejections, as detailed above, for the following reasons.

Regarding Claim Objections

Claim 3 is amended to depend on claim 2 instead of claim 1, as suggested by the Examiner. (*See* Office Action, p. 2). Applicants appreciate the Examiner's pointing out the appropriate correction and respectfully request the objection to be withdrawn upon entry of this amendment.

Regarding Claim Rejections under 35 U.S.C. § 102(b)

Applicants respectfully traverse the rejection of claims 1, 4, 8, 11, 15, 18 and 22 under 35 U.S.C. § 102(b) as anticipated by Poggio.

In order to properly anticipate Applicants' claimed invention under 35 U.S.C. § 102(b), each and every element of the claim in issue must be found, either expressly described or under principles of inherency, in a single prior art reference. Further, "[t]he identical invention must be shown in as complete detail as is contained in the...claim." *See* M.P.E.P. § 2131, quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989).

Claims 1, 8, 15, and 22, as amended, call for combinations including, for example, "determining a surface fitting based on the face region for the image using a linear model." Poggio discloses "[a]n illumination gradient correction . . . performed by subtracting a best-fit brightness plane from the unmasked window pixels," and the "[m]asker 144 masks those pixels outside the area of interest in recognizing a face, . . . [s]pecifically, those pixels in the corners of the 19x19 window," "as human faces are generally ovoid rather than square in shape." Poggio, col. 5 lines 6-12, col. 9 lines 44-50. As such, the masker 144 is of simple geometric form predetermined regardless of the contour of a face, and the same mask, once determined, is applied to all the images with different faces. Therefore, the masker 144 in Poggio does not constitute the face region of the image.[1] Thus, Poggio does not disclose "determining . . . based on the face region for the image. . ." as required by the claims quoted above.

[1] The Examiner in fact concedes that "Poggio is silent to extracting the face from other regions. . . ." (Office Action, p. 4).

Furthermore, Poggio does not teach how to determine the surface fitting. Poggio merely mentions "subtracting a best-fit brightness plane." Poggio, col. 5 lines 13-14. Poggio fails to teach that the brightness plane, which consists of pixels of the same brightness value, is or could be calculated using "a linear model." Thus, Poggio also fails to disclose "determining a surface fitting . . . using a linear model," as required by the claims quoted above.

Therefore, Poggio does not, either expressly or under principles of inherency, disclose at least "determining a surface fitting based on the face region for the image using a linear model," as required by amended claims 1, 8, 15, and 22. Thus, claims 1, 8, 15, and 22, as amended, are not anticipated by Poggio under 35 U.S.C. § 102(b) and the rejection of claims 1, 8, 15, and 22 should be withdrawn.

Since claim 4 depends on claim 1, claim 11 depends on claim 8, and claim 18 depends on claim 15, Applicants respectfully request withdrawal of the rejection of claims 4, 11, and 18 for at least the same reasons stated above.

Regarding Claim Rejections under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of claims 2, 3, 9, 10, 16, 17, and 23-26 under 35 U.S.C. § 103(a) as being unpatentable over Poggio in view of Qian; the rejection of claims 5, 6, 12, 13, 19, 20, 27, 28, 31, 34, and 36 under 35 U.S.C. § 103(a) as unpatentable over Poggio in view of Zettel; and the rejection of claims 7, 14, 21, 29, 32, and 35 under 35 U.S.C. § 103(a) as unpatentable over Poggio in view of Zettel, and further in view of Qian.

In order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim elements. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a

reference or to combine reference teachings. Third, there must be a reasonable expectation of success. *See* M.P.E.P. § 2143.

Claims 1, 8, 15 and 23-26, as amended, call for combinations including, for example, "determining a surface fitting using a linear model." As set forth above, Poggio does not teach "determining a surface fitting using a linear model." Qian fails to cure Poggio's deficiency. Qian teaches a method to determine a face region based on whether or not a particular pixel is a skin tone. *See* Qian, col. 4 lines 24-40. However, such teaching does not constitute a teaching of "determining a surface fitting" nor of "determining a surface fitting using a linear model," as required by claims 1, 8, 15 and 23-26. Therefore, Applicants submit that claims 1, 8, 15 and 23-26 are nonobvious under 35 U.S.C. § 103(a) over Poggio in view of Qian.

Furthermore, "[i]f an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious." M.P.E.P. § 2143.03, quoting *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Because claims 2 and 3 depend on claim 1, claims 9 and 10 depend on claim 8, and claims 16 and 17 depend on claim 15, Applicants further submit that claims 2, 3, 9, 10, 16 and 17 are also nonobvious under 35 U.S.C. § 103(a) over Poggio in view of Qian. Applicants respectfully request withdrawal of rejection of claims 2, 3, 9, 10, 16, 17, and 23-26 under 35 U.S.C. § 103(a) as being unpatentable over Poggio in view of Qian.

Although Zettel teaches a method to perform histogram normalization, such teaching does not constitute a teaching of "determining a surface fitting" nor of "determining a surface fitting using a linear model." Therefore, Zettel, like Qian, fails to cure Poggio's deficiency. Applicants submit that claims 1, 8, and 15 are nonobvious under 35 U.S.C. § 103(a) over Poggio in view of Zettel. Since claims 5 and 6 depend on claim 1, claims 12 and 13 depend on claim 8, and claims 19 and 20 depend on claim 15, Applicants further submit that claims 5, 6, 12, 13, 19

and 20 are also nonobvious under 35 U.S.C. § 103(a) over Poggio in view of Zettel. Applicants respectfully request withdrawal of rejection of claims 5, 6, 12, 13, 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Poggio in view of Zettel.

Claims 28, 31, and 34, as amended; and claims 7, 14, 21, 29, and 32 call for combinations including, for example, "computing an average gray level for the plurality of pixels in the image using only the pixels that are determined to be part of the face region." Poggio teaches that "[h]istogram equalizer 148 [for normalization] adjusts for geometry independent sources of window pattern variation," and the window pattern has the size of 19x19 pixels. Poggio, col. 5 lines 1-18. Therefore, Poggio teaches computing the average gray level using all the pixels in the window, instead of "only the pixels that are determined to be part of the face region," as required by claims 28, 31 and 34.[2] Poggio fails to teach "computing an average gray level for the plurality of pixels in the image using only the pixels that are determined to be part of the face region" as required by the claims quoted above.

Both Zettel and Qian fail to cure Poggio's deficiency. Qian teaches a method to determine a face region based on whether or not a particular pixel is a skin tone. *See* Qian, col. 4 lines 24-40. However, this does not constitute a teaching of performing histogram normalization using "only the pixels that are determined to be part of the face region." Zettel teaches a method to perform histogram normalization. However, this does not constitute a teaching of using "only the pixels that are determined to be part of the face region."

[2] The Examiner's statement that Poggio could suggest to use only partial pixels of the window size is not supported by Poggio's teaching. Poggio teaches using a mask for brightness correction then refuses to use the same mask for histogram normalization, instead Poggio teaches using all pixels from the image window; therefore Poggio teaches away from using a variable size mask for normalization. *See* Poggio, col. 5 lines 1-18.

Therefore, Applicants submit that claims 28, 31, and 34, as amended, are nonobvious under 35 U.S.C. § 103(a) over Poggio in view of Zettel, and further in view of Qian. Applicants respectfully request withdrawal of rejection of claims 28, 31, and 34; and related dependent claims 29, 32, and 35 under 35 U.S.C. § 103(a) as being unpatentable over Poggio in view of Zettel, and further in view of Qian.

Conclusion:

In view of the foregoing, Applicants request reconsideration of the application and submit that the rejections detailed above should be withdrawn. This Amendment should allow for immediate and favorable action by the Examiner. Applicants submit that the pending claims are in condition for allowance, and request a favorable action.

Please grant any extensions of time under 37 C.F.R. § 1.136 required in entering this response. If there are any fees due under 37 C.F.R. § 1.16 or 1.17, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our deposit account 06-0916.

Respectfully submitted,

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